



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,444	09/08/2003	James Cushman	CIS03-41(7924)	1643

7590

08/17/2005

David E. Huang, Esq.  
CHAPIN & HUANG, L.L.C.  
Westborough Office Park  
1700 West Park Drive  
Westborough, MA 01581

EXAMINER
----------

TRAN, DUE NGOC

ART UNIT	PAPER NUMBER
----------	--------------

2841

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/657,444	<b>Applicant(s)</b> CUSHMAN ET AL.	
	<b>Examiner</b> Due N. Tran	<b>Art Unit</b> 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/7/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claim 1-4,6-9,11-15,17-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Manabe et al (US 6,711,019).
2. With respect to claim 1, Manabe discloses an air stream distribution apparatus comprising: a base configured to couple with a circuit board, the base defining a first end and a second end (Fig. 1, element 3a); and a plurality of deflectors in communication with the base and arranged in series between the first end and the second end defined by the base (Fig. 1 element 3b), each of the plurality of deflectors defining a leading edge (inside edge of the deflector), the leading edge of each of the plurality of deflectors defining a height relative to a plane defined by the base, the height defined by the leading edge of each deflector increasing along an air stream direction between the first end and the second end defined by the base (the air stream can be flown both directions from right left and top to bottom), each of the plurality of deflectors

configured to direct a corresponding portion of an air stream toward a respective area of the circuit board (Fig. 1 element 3b).

3. With respect to claim 2, Manabe discloses an air stream distribution apparatus in accordance with claim 1 wherein each deflector of the plurality of deflectors defines an angle relative to the plane defined by the base, the angle of each deflector increasing, relative to the plane defined by the base, along the air stream direction between the first end and the second end defined by the base (Fig.1).

4 With respect to claim 3, Manabe discloses an air stream distribution apparatus in accordance with claim 1 wherein the each deflector of the plurality of deflectors defines a trailing edge (outside edge of the deflector), a distance between the leading edge and the trailing edge defining a deflector length, the deflector length of each deflector increasing along the air stream direction between the first end and the second end defined by the base (Fig.1).

5. With respect to claim 4, Manabe discloses an air stream distribution apparatus in accordance with claim 1 wherein the leading edge (inside edge of the deflector) defined by at least one deflector of the plurality of deflectors further defines a first thickness and wherein the at least one deflector defines a trailing edge (outside edge of the deflector) further defining a second thickness, the second thickness of the trailing edge less than the first thickness of the leading edge (Fig.1).

6. With respect to claim 6, Manabe discloses an air stream distribution assembly comprising: at least one circuit board component configured to couple to a circuit board (Fig. 1 element 1, and page 14, col. 1, lines 8-9. Manabe discloses a micro-processing

Art Unit: 2841

unit (MPU) used for a personal computer or the like. It inherent that the MPU must couple to a circuit board in order for the computer to operate), and an air stream distribution apparatus having a base configured to couple with a circuit board, the base defining a first end and a second end (Fig. 1, element 3a); and a plurality of deflectors in communication with the base and arranged in series between the first end and the second end defined by the base (Fig. 1 element 3b), each of the plurality of deflectors defining a leading edge (inside edge of the deflector), the leading edge of each of the plurality of deflectors defining a height relative to a plane defined by the base, the height defined by the leading edge of each deflector increasing along an air stream direction between the first end and the second end defined by the base (the air stream can be flown both directions from right left and top to bottom), each of the plurality of deflectors configured to direct a corresponding portion of an air stream toward a respective area of the circuit board (Fig. 1 element 3b).

7. With respect to claim 7, Manabe discloses an air stream distribution assembly in accordance with claim 6 wherein each deflector of the plurality of deflectors defines an angle relative to the plane defined by the base, the angle of each deflector increasing, relative to the plane defined by the base, along the air stream direction between the first end and the second end defined by the base (Fig.1).

8. With respect to claim 8, Manabe discloses an air stream distribution assembly in accordance with claim 6 wherein the each deflector of the plurality of deflectors defines a trailing edge (outside edge of the deflector), a distance between the leading edge (inside edge of the deflector) and the trailing edge defining a deflector length, the

Art Unit: 2841

deflector length of each deflector increasing along the air stream direction between the first end and the second end defined by the base (Fig.1).

9. With respect to claim 9, Manabe discloses an air stream distribution assembly in accordance with claim 6 wherein the leading edge defined (inside edge of the deflector) by at least one deflector of the plurality of deflectors further defines a first thickness and wherein the at least one deflector defines a trailing edge (outside edge of the deflector) further defining a second thickness, the second thickness of the trailing edge less than the first thickness of the leading edge (Fig.1).

10. With respect to claim 11, Manabe discloses an air stream distribution assembly in accordance with claim 6 wherein the at least one circuit board component comprises at least one transceiver module removeably coupled to the support and wherein each of the plurality of deflectors are configured to direct the corresponding portion of the air stream toward the at least one transceiver module (Fig. 1 element 1, and page 14, col. 1, lines 27-30. The micro-processing unit (MPU) is capable of receiving and transferring data).

11. Claim 12 is rejected under 35 U.S.C. 102(e) as being corresponding to claim 6 wherein a circuit board (not shown); at least one circuit board component coupled to the circuit board (Fig. 1 element 1), and an air stream distribution apparatus having: a base configured to couple with a circuit board, the base defining a first end and a second end (Fig. 1, element 3a); and a plurality of deflectors in communication with the base and arranged in series between the first end and the second end defined by the base (Fig. 1 element 3b), each of the plurality of deflectors defining a leading edge (inside edge of

Art Unit: 2841

the deflector), the leading edge of each of the plurality of deflectors defining a height relative to a plane defined by the base, the height defined by the leading edge of each deflector increasing along an air stream direction between the first end and the second end defined by the base (the air stream can be flown both directions from right left and top to bottom), each of the plurality of deflectors configured to direct a corresponding portion of an air stream toward the at least one circuit board component(Fig. 1 element 3b).

12. Claim 13 is rejected under 35 U.S.C. 102(e) as being corresponding to claim 7 wherein each deflector of the plurality of deflectors defines an angle relative to the plane defined by the base, the angle of each deflector increasing, relative to the plane defined by the base, along the air stream direction between the first end and the second end defined by the base (Fig.1).

13. Claim 14 is rejected under 35 U.S.C. 102(e) as being corresponding to claim 8 wherein the each deflector of the plurality of deflectors defines a trailing edge (outside edge of the deflector), a distance between the leading edge (inside edge of the deflector) and the trailing edge defining a deflector length, the deflector length of each deflector increasing along the air stream direction between the first end and the second end defined by the base (Fig.1).

14. Claim 15 is rejected under 35 U.S.C. 102(e) as being corresponding to claim 9 wherein the leading edge (inside edge of the deflector) defined by at least one deflector of the plurality of deflectors further defines a first thickness and wherein the at least one deflector defines a trailing edge (outside edge of the deflector) further defining a second

thickness, the second thickness of the trailing edge less than the first thickness of the leading edge (Fig.1).

15. Claim 17 is rejected under 35 U.S.C. 102(e) as being corresponding to claim 11 wherein the at least one circuit board component comprises at least one transceiver module removeably coupled to the circuit board and wherein each of the plurality of deflectors are configured to direct the corresponding portion of the air stream toward the at least one transceiver module (Fig. 1 element 1, and page 14, col. 1, lines 27-30. The micro-processing unit (MPU) is capable of receiving and transferring data).

16. With respect to claim 18, Manabe discloses a computer system comprising: a frame (page 14, col. 1, lines 8-9. The personal computer has a frame to protect the electronic components from being damaged), a fan assembly coupled to the frame and configured to generate an air stream (Fig. 1 element 4), and at least one circuit board assembly coupled to the frame (not shown), the circuit board assembly having: a circuit board (Fig. 1 element 1, and page 14, col. 1, lines 8-9. Manabe discloses a micro-processing unit (MPU) used for a personal computer or the like. It inherent that the MPU must couple to a circuit board in order for the computer to operate), at least one circuit board component coupled to the circuit board (Fig. 1 element 1) and an air stream distribution apparatus having: a base configured to couple with the circuit board, the base defining a first end and a second end (Fig. 1, element 3a); and a plurality of deflectors in communication with the base and arranged in series between the first end and the second end defined by the base (Fig. 1 element 3b), each of the plurality of deflectors defining a leading edge (inside edge of the deflector), the leading edge of



Art Unit: 2841

each of the plurality of deflectors defining a height relative to a plane defined by the base, the height defined by the leading edge of each deflector increasing along an air stream direction between the first end and the second end defined by the base (the air stream can be flown both directions from right left and top to bottom), each of the plurality of deflectors configured to direct a corresponding portion of an air stream toward the at least one circuit board component (Fig. 1 element 3b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 5,10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manabe (US 6,711,019) in view of Solberg (US 5,343,362)

As noted above in the rejections under 35 USC 102(e), Manabe discloses an air stream distribution apparatus, an air distribution assembly, and a circuit board assembly in accordance with claims 4,9, and 15 wherein the trailing edge defined by the at least one deflector further defines a substantially tapered edge (Fig.1, the thickness of the deflector getting thinner as it goes from inside to outside edge), however, does not disclose expressly wherein the leading edge defined (inside edge of the deflector) by the at least one deflector further defines a substantially rounded edge.

The Solberg reference, however, discloses an air stream distribution having at least one deflector with a substantially rounded edge (Fig.2, the inside edge of the deflector 36).

Manabe and Solberg are analogous art because they are from the same field of endeavor (Air stream distribution).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the deflector of Manabe with a rounded edge.

The suggestion or motivation for doing so would have been obvious in view of teaching of Solberg by having a rounded leading edge deflector, so that it will increase the speed of the air-flow into the device.

Therefore, it would have been obvious to combine Solberg with Manabe for the benefit of being able to increase the air-flow speed for faster cooling down the device to obtain the invention as specified in claim 5.

18. Regarding to method claims 19- 23, one skill in the art would necessarily perform the recited method steps in manufacturing an air stream distribution apparatus rejected above.

#### ***Relevant Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

19. The Yamashita et al (US 6,529,374) reference teaches an air distribution with plurality of the deflectors having a height increasing along the air stream direction.

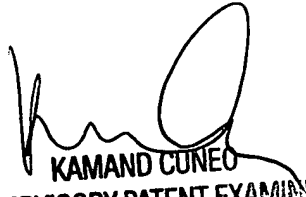
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Due N. Tran whose telephone number is (571) 272-5984. The examiner can normally be reached on Monday-Thursday, 9:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DT

  
KAMAND CUNEO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2809